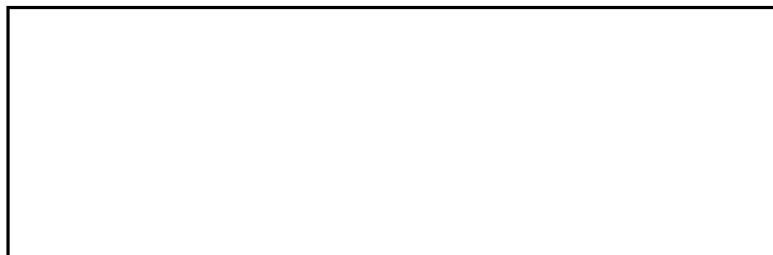


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15 February 1966

U. S. Government
Washington, D.C.

Declass Review by NGA

Attention: Contracting Officer

Subject: Task Order No. 02(100,677)65R
Basic Agreement

Enclosure: a) Prototype Modulated - Light Film Viewing Tables -
Monthly Narrative Report - January 1966 - Two (2)
copies

Gentlemen:

 forwards here-
with enclosure a) in accordance with the reporting requirements under
Item 4 of subject contract Task Order.

By copy of this letter, we are forwarding three (3) additional copies
of the monthly report to the technical representative.

Should you desire further information in this matter, please feel free
to contact the undersigned.

Very truly yours,

Signed by

Contract Representative

obj

cc: Technical Representative (w/encl. 3) ✓

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PROTOTYPE MODULATED-LIGHT FILM VIEWING TABLES

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CONTRACT NO. [REDACTED] TASK ORDER NO. 02(100,677)65-R

Monthly Narrative Report - January 1966

This is the seventh of a series of monthly narrative reports on the development of two prototype modulated-light film viewing tables. With each table, photographic transparencies will be illuminated by a fast-moving spot of light whose intensity will be automatically varied to effect large-area contrast compression. At the option of the operator, the film will be viewed in either a direct or microscope mode. This report covers the work performed by the [REDACTED]

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[REDACTED] during the period from 22 December 1965 to 22 January 1966.

A. Current Status of Work

A joint technical review of the program (including a status demonstration of the first prototype table) was held at the [REDACTED] on 6 January 1966. Several commitments and agreements were made at that time (see Paragraph E).

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As a result of the meeting, the width of the film loading door on each prototype table was increased by two inches. An investigation of film transport designs was also performed. [REDACTED] did not respond to our inquiry, [REDACTED] did not wish to be a vendor for this item, and [REDACTED] estimated the cost of an improved transport at [REDACTED] (installation). An internal [REDACTED] proposal also indicated that the cost of an improved transport would exceed [REDACTED]

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Operation of Prototype I revealed problems in the electrical feedback loop. Excessive time delays were reduced by utilizing the UV output of the kinescope

phosphor in connection with the photo-multiplier. Lead-lag circuits, damping circuits, and dc coupling, were introduced to eliminate or reduce oscillations, ringing and blooming, respectively. Approximately 31:1 contrast compression was achieved with the modified equipment without the diffuser and about 17:1 with the diffuser in place. These solutions were verified in system tests. The circuit is being examined to determine the feasibility of alternative means of achieving the desired compression with the diffuser without major re-design or additional cost.

Brightness measurements were also made on Prototype I. Peak brightness of 800 ft-lamberts and 550 ft-lamberts were achieved for 7" x 8" and 9" x 12" rasters, respectively. Higher operating values could result in significant kinescope damage. These brightness levels were achieved without the diffuser in place.

The film transport was re-investigated in light of its malfunction during the demonstration of January 6. Gearing modifications were made to prevent film damages resulting from fast stop-start operation. Evaluation tests are now underway. With respect to Prototype II, the following tasks have been performed: item fabrication and purchase, kinescope fabrication, pedestal electronics assembly, control console construction, pedestal and base mechanical assembly, and elevation mechanism installation.

B. Problem Areas Encountered

Complete system testing of Prototype I revealed problems in the electrical feedback loop. Disturbing effects such as oscillations, ringing and blooming were traced to the circuit design. Electrical modifications were made (see Paragraph A), and subsequent tests verified the approaches.

C. Projected Work for Next Monthly Period

Based upon current estimates of work completion, the pre-delivery inspection of the first prototype table is scheduled for March 11. The remaining major tasks include:

Electrical Modification

Optimum feedback (testing)

Microscope raster follow and pickup

Kinescope defocus

Mechanical Modification

Cover plate latch

Pantograph re-adjustment.

Complete System Testing and Checkout.

Based upon current estimates of work completion, the pre-delivery inspection of the second prototype table is scheduled for April 5. The remaining major tasks include:

Mechanical Sub-Assembly

Pantograph modification and assembly

Cage assembly

Harnesses (cabling)

Electrical, Mechanical Modification

Electrical-Mechanical Integration

Electrical Mechanical Testing

Final Instruction and Maintenance Manual.

D. Status of Fund Expenditures to End of Monthly Period

Funds expended (and committed) at break-even level to 30 January 1966:

July

August

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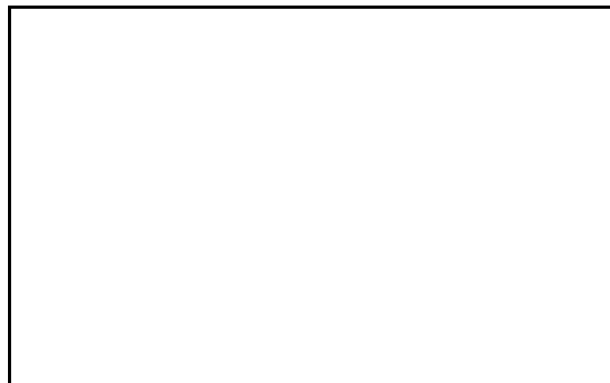
September

October

November

December (revised)

January (estimated)



E. Documentation of Verbal Commitments and/or Agreements During the Period

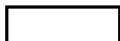
1. In connection with the presentation at the David Sarnoff Research Center on January 6, ☐ promised to prepare and forward minutes of the meeting as soon as possible. This agreement was met.

2. As a result of the various discussions on January 6, ten action items covering tasks to be performed by ☐ were listed:

- 1) Review and optimize the feedback system
- 2) Perform some additional systems operation
- 3) Repair film cover latch
- 4) Make necessary raster-follow adjustments
- 5) Provide kinescope defocus
- 6) Perform required additional measurements
- 7) Place a stop on the kinescope high-voltage adjust
- 8) Attach microscope photomultiplier pickup
- 9) Move rear legs on control console
- 10) Re-adjust pantograph

Tasks 1,2,6 and 7 have already been performed or are well under way and nearing completion. The other items are scheduled for completion before March 11.

3. It was further agreed on January 6 that the impact on the program of two Government-requested equipment modifications would be determined and reported by



- 1) Increase width of film loading door
- 2) Improve the film transport

This agreement was met. (The width of the film loading door on each prototype table was subsequently increased by two inches. Best estimates for the cost of improving the film transport were higher than

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STAT 4. During a telephone conversation with the Technical Representative on January 19, personnel agreed to define contrast compression as the ratio of maximum brightness (through minimum density areas of the transparency) without modulation to that with modulation, minimum brightness (through maximum density areas of the transparency) remaining constant.

1981's
1982's
1983's

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PROTOTYPE MODULATED-LIGHT FILM VIEWING TABLESCONTRACT  TASK ORDER NO. 02(100,677)65-R

Monthly Narrative Report - December 1965

This is the sixth of a series of monthly narrative reports on the development of two prototype modulated-light film viewing tables. With each table, photographic transparencies will be illuminated by a fast-moving spot of light whose intensity will be automatically varied to effect large-area contrast compression. At the option of the operator, the film will be viewed in either a direct or microscope mode. This report covers the work performed by the 

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 during the period from 22 November to 22 December 1965.

A. Current Status of Work

Fabrication of all the major mechanical and electronic sub-assemblies for Prototype I was completed near the end of the monthly period. The delay involved in this task necessitated revision of the PERT schedule for the first prototype modulated-light film viewing table. Electro-mechanical integration is now scheduled for completion by 27 December.

With respect to work on Prototype II, all the parts have been ordered, many of the items have been manufactured, and sub-assembly (mainly electronic) fabrication has begun.

The Preliminary Instruction and Maintenance Manual is nearly completed.

B. Problem Areas Encountered

Electro-mechanical integration has produced concern for the film transport performance. Achievement of the 50-inch/second speed appears to be a major problem.

Efforts are also being directed toward the achievement of solutions to other problems normally associated with the development of prototype equipment.

C. Projected Work for Next Monthly Period

The PERT schedule for the first prototype modulated-light film viewing table has been revised to reflect the status of work at the end of the monthly period. The remaining major tasks and corresponding dates are as follows:

<u>Tasks</u>	<u>Dates</u>
Electro-Mechanical Integration (Complete)	27 December
Electro-Mechanical Test	28 December- 5 January
Quality Control Checkout	5 January
Preliminary Instruction and Maintenance Manual (Complete)	5 January
Pre-Delivery Inspection	6 January
Prototype I and Preliminary Manual Ship.	To be Decided.

A PERT schedule for the second prototype table (and Final Instruction and Maintenance Manual) will be prepared, also during the next monthly period, to include the results of the pre-delivery inspection of Prototype I. The major tasks include: mechanical sub-assembly completion, electronic sub-assembly completion, electro-mechanical integration, electro-mechanical test, quality control checkout, final manual completion, and pre-delivery inspection.

D. Status of Fund Expenditures to End of Monthly Period

Funds expended (and committed) at break-even level to 31 December 1965:

July
August
September
October
November

E. Documentation of Verbal Commitments and/or Agreements During the Period

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At the request of the pre-delivery inspection of Prototype I by representatives of the Contracting Officer was postponed from 17 December 1965. By mutual agreement, the visit was re-scheduled for 6 January 1966.